IN THE CLAIMS:

1. An OLED structure comprising:

a substrate;

an OLED over said substrate, said OLED comprising a first electrode, an emission region over said first electrode and a second electrode over said emission region, and said OLED emitting light having a range of wavelengths upon being turned on; and

a multilayer mirror over said substrate, said multilayer mirror comprising an alternating series of (a) planarizing layers having a first refractive index and (b) high-density layers having a second refractive index that differs from said first refractive index,

wherein the thicknesses of said planarizing layers and of said high-density layers are selected such that said multilayer mirror is tuned to transmit light at a peak wavelength within said range of wavelengths, and

wherein said planarizing layers and said high-density layers cooperate to restrict transmission of water and oxygen.

2. The OLED structure of claim 1, wherein said multilayer mirror is a quarter-wave stack.

3. The OLED structure of claim 2, wherein said planarizing layers comprise a material selected from fluorinated polymers, parylenes, cyclotenes and polyacrylates.

4. The OLED structure of claim 2, wherein said high density layers comprise a material selected from silicon oxides, silicon nitrides, silicon oxynitrides, aluminum oxides, titanium oxides, indium tin oxides, zinc indium tin oxides and metals.

5. The OLED structure of claim 2, wherein said planarizing layers comprise polyacrylate and said high-density layers comprise aluminum oxide.

6. The OLED structure of claim 2, wherein said first electrode is an anode and said second electrode is a cathode.

7. The OLED structure of claim 2, wherein said OLED device is a top-emitting device.

8. The OLED structure of claim 2, wherein said OLED device is a bottom-emitting device.

9. The OLED structure of claim 2, wherein said OLED device is a transparent device.

10. The OLED structure of claim 2, wherein said quarter-wave stack is provided between said OLED and said substrate, and wherein said first electrode is a transparent electrode.

11. The OLED structure of claim 10, wherein said first electrode is a transparent anode and said second electrode is a cathode.

12. The OLED structure of claim 11, wherein said second electrode is a reflective cathode.

13. The OLED structure of claim 10, wherein said second electrode is a transparent electrode and further comprising an additional quarter-wave stack provided over said second electrode.

14. The OLED structure of claim 13, wherein said first electrode is a transparent anode and said second electrode is a transparent cathode.

15. The OLED structure of claim 2, wherein said quarter-wave stack is provided over said OLED and wherein said second electrode is a transparent electrode.

16. The OLED structure of claim 15, wherein said first electrode is an anode and said second electrode is a transparent cathode.

17. The OLED structure of claim 16, wherein said first electrode is a reflective anode.

18. An OLED structure comprising:

a transparent substrate;

an OLED over said transparent substrate, said OLED comprising a transparent anode, an emission region over said transparent anode and a reflective cathode over said emission region, and said OLED emitting light having a range of wavelengths upon being turned on; and

a quarter-wave stack provided between said OLED and said substrate, said quarter-wave stack comprising an alternating series of (a) planarizing layers having a first refractive index and (b) high-density layers having a second refractive index that differs from said first refractive index,

wherein the thicknesses of said planarizing layers and of said high-density layers are selected such that said quarter-wave stack is tuned to transmit light at a peak wavelength within said range of wavelengths, and

wherein said planarizing layers and said high-density layers cooperate to restrict transmission of water and oxygen.

19. An OLED structure comprising:

a substrate;

an OLED over said substrate, said OLED comprising a reflective anode, an emission region over said reflective anode and a transparent cathode over said emission region, and said OLED emitting light having a range of wavelengths upon being turned on; and

a quarter-wave stack over said OLED, said quarter-wave stack comprising an alternating series of (a) planarizing layers having a first refractive index and (b) high-density layers having a second refractive index that differs from said first refractive index,

wherein the thicknesses of said planarizing layers and of said high-density layers are selected such that said quarter-wave stack is tuned to transmit light at a peak wavelength within said range of wavelengths, and

wherein said planarizing layers and said high-density layers cooperate to restrict transmission of water and oxygen.